CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SECURITY INFORMATION

COUNTRY	Rumania	÷ ;	REPORT		
SUBJECT	Bucharest Electric	al Plant	DATE DISTR.	15 April 1953 25X1	•
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Plant History

1. Since 1948, the Dinamo Electrical Equipment Plant has been located on the northern periphery of Cotroceni Airfield (1426N-2603E); it occupies the buildings of the former ASAM (Arsenalul Aviatiei Militare). The plant is the result of the centralization of several nationalized electrical industries which contributed both equipment and personnel. The "Trafo" plant formerly on Strada Dr. Felix in Bucharest was completely absorbed by the Dinamo Plant, as was an electrical industry from Sfantul Gheorghe (4552N-2547E) in Transylvania (possibly called Morega). Technicians were brought in from the Rumanian branch of AEG and also from the Electro-Motoru Plant at Resita (4518N-2154E) or Hunedoara (4546N-2253E). The Dinamo Plant in 1952 was the major producer of electrical transformers and electric motors in Rumania; it was not planned, however, to engage in mass production but was to be concerned with small orders; it was supposed to have had a "special projects" section for the Rumanian Army.

Production

2. The Dinamo Electrical Plant in Bucharest was the principal producer of transformers in Rumania at the time of my employment from January 1950 to January 1952. Dinamo also produced electric motors and some accessories. The following types of transformers were manufactured: 25 KVA (kilovolt amperes), 50 KVA, 100 KVA,

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160 KVA, 200 KVA, 250 KVA, 300 KVA, 500 KVA, 1,000 KVA, 1,500 KVA, 2,500 KVA, 3,000 KVA or 3,500 KVA, and 5,000 KVA. Transformers were manufactured to carry tensions ranging from a maximum of 60,000 V to manufactured to carry tensions ranging from a maximum of 60,000 V to a minimum of 100 V. The approximatelfigures on production of transformers for one month during the latter part of 1951 are as follows: 500 KVA and 50 KVA types, 10-20; 100 KVA to 300 KVA types, 20-40; 25 KVA and 50 KVA types, 10-20; 100 KVA to 300 KVA and 2,500 KVA types, 500 KVA types, 1-3. During the period June 1950 until January 1952, Dinamo was the only producer of the 5,000 KVA transformer in Rumania, the prototype being produced by the plant in 1950. Eight were manufactured in 1950 and approximately 25-30 were manufactured in 1951. The majority of these were used for the five year plan for the electrification of Rumania now in progress (Palnul de Electrificare al Tari).

- 3. Electric motor production amounted to "some hundreds" a month. Five KW to 190 KW motors were built. From 30 to 50 motors of the 100 KW and 190 KW types were produced a month during 1951. Two 300 other types were produced a month. Dinamo also manufactured a special motor which I believe was of the 400 KW type.

 10. 25X1 to 15 of this type were produced in 1951. This type was a copy of a Hungarian electric motor "Ganz".
- 4. Electrical accessory production at Dinamo seemed to be the least important work at the plant. The principal accessories manufactured were regulators and starter motors. This production usually lagged behind the demand and accessories were obtained from smaller electrical plants in the Bucharest area.
- approximately 3,000 workers were employed at Dinamo, including skilled workers, administrative personnal and apprentices.

Source of Power and Raw Materials

- 6. The electric power necessary for the operation of the plant came from the electric power network of the city of Bucharest.
 - a. Copper was obtained from the Laminorul Factory (Fabrica Laminorul) which I believe was located in Bucharest. The supply of copper seemed to be a problem in that a new supply failed to arrive when needed.

b. Insulation material was obtained from Czechoslovakia.

During 1951, insulation material
was obtained from the USSR also but was discontinued, since the
Czechoslovak supply was of better quality.

Czechoslovak supply was of better quality.

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Czechoslovak supply was of better quality.

System of the USSR also but was discontinued, since the
Czechoslovak supply was of better quality.

System of the USSR also but was discontinued, since the
Czechoslovakia.

- c. Transformer oil supply was no problem. It was obtained from Rumanian oil firms and there was always a sufficient supply.
- d. The special metal plating (tole) used in transformer manufacture was obtained from firms in Rumania and the USSR. Other metals were obtained from plants in Resita and Hunedoara, Rumania.
- e. High tension insulators were obtained from Czechoslovakia. Smaller tension insulators arrived from Turda, Rumania (Fabrica de Insolante)

c .		25X
· .	Lathes and drill presses were manufactured in Poland and Czechoslovakia. was on some lathes.	25X

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Destination of Finished Products

7. During the last half of 1951 approximately 80% of the electrical equipment produced by Dinamo was for the oil industry ("Sovrom Petrol"). All types of transformers were ordered. However, the majority were the 2,500 KVA type. The 5,000 KVA type was being majority were the 2,500 KVA type. The 5,000 KVA type was being manufactured for use in the five year electrification plan of Rumania. Manufactured for the Other orders went to Galati and Hunedoara to be used probably for the iron plants.

Sovrom Petrol In September and In September and October electric motors (100 KW and 190 KW) were manufactured for the 25X1 oil industry, "Sovrom Petrol". One 400 KW was built oil industry, "Sovrom Petrol". One 400 KW was built for a new cement factory in the Dobrogia region which was a principal 25X1 sumplier of cement for the Danube/Black Sea Canal construction. 25X1 electrical machinery from Dinamo were during the first few days of 25X1 each month.

Expansion Planned or in Progress

- 8. The plan for Dinamo during the period of my employment was to produce large quantities of medium power electrical machinery (DC) and to manufacture electrical machinery requested by special order. However, Dinamo was also producing the larger power electrical machinery until such time that a new electrical plant Electroputere was completed in Graiosca. Upon completion of this plant, the plan was for Dinamo to manufacture prototypes, generators, motors and accessories. Transformers were not to be produced by Dinamo in the future plan. Dinamo was to be the experimental plant for principal type electrical machinery and the principal producer of DC current motors and generators.
- 9. With regard to the Electroputere Plant in Craiova, it was being installed in a partially completed construction begun by the Germans during World War II for locomotive production. Electroputere began production on a very small scale in 1951. Electroputere manufactured its first 5,000 KVA transformer in the latter part of 1951 and it was transported to Dinamo for testing. Electroputere is or will be the principal manufacturer of heavier transformers (e.g. 5,000 KVW type) and generators for the five year plan for the electrification of Rumania.

 Electroputere had plans for a 10,000 KVA transformer. Many of the electrical engineers at Electroputere had been trained in the USSR.
- 10. During the latter part of 1951 and January 1952 new machinery including lathes, drill presses, metal cutting machines, and automatic coil winders, being added to the main work shop building /Encl. B, Point #47. Within this building there seemed to be a constant rearrangement of machinery.
- 11. It was planned to enlarge and modernize the melting and molding section /Encl. B, Point #67; a new oven room (cuptoare de uscat) was nearing completion in January 1952 /Encl.D, Point #67.

Shortages of Materials

122. The most serious shortage was the supply of copper. It usually occurred each month, delaying production. A shortage of bakelite lacquer (bekelit-lac) was also encountered, especially during the first half of 1951. At various times during 1950 and early 1951 there had been shortages of insulators from the Insulator Factory there had been shortages of insulators from the Insulator Factory (Fabrica de Insolante) at Turda, Rumania. It was common to receive a defective supply of insulators from this factory during the period mentioned.

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Delays in Production

- 13. The primary bottleneck in production in Dinamo was the unskilled worker, the lack of precision machinery, and unsatisfactory technician and designing personnel. The continual rush to meet production quotas always brought about defective work. The following examples are typical.
 - In the Fall of 1950 a prototype transformer of 5,000 KVA was built by the Dinamo Electrical Equipment Plant. This transformer, copied but simplified from a German design, was found to be satisfactory. Consequently the Ministerul Energiei Electrice placed eight such transformers on the production quota for the month of December 1950. This was an excessive order which could not be practically fulfilled by the facilities in the plant. The eight transformers (valued at 20,000,000 lei each) were, however, produced by the end of December with the result that five of the eight burned out upon final inspection. The five were rebuilt but three burned out at the second final inspection. Finally, two of the three transformers had to be totally rebuilt in order that specifications be met. The rush nature of this job was not the entire cause of the fiasco. supervision of production was lacking and the workers, especially in the coils department, did not reject defective material which they worked with since they were afraid that blame for a slow-down would be placed on them. A prime example of this is the defective insulation of copper wiring received from the Laminoru factory which workers had not rejected. Upon compression of the copper coils the insulation broke or cracked where two wires intersected. This, of course, was found out during the investigation which followed after the transformers burned out during final inspection.
 - b. On several occasions during 1951 fish paper dipped in insulating varnish had been left in the drying ovens too long, resulting in the carbonization of the fish paper. On each occasion production in the coils department was slowed down two or three days.
 - c. In the Dinamo Plant, especially in the coils department, there was not enough care and thoroughness. First of all, the workers were deficient in their skill and the coils department was so dirty that it was not conducive to careful work. Management, during the latter part of 1951, was alleviating the filth problem.
 - d. Due to the rush at the end of each month, many deficiencies occurred in order that production quotas be met. For example, during the Spring of 1951 the following incident occurred. In the electric motors section of the Dinamo Plant, motor coils which were dipped in insulating varnish were quick-dried in the ovens, in order to save time. These motor coils were then allowed to cool and pushed through the inspection department in cold state, thus passing the final. In final testing the motors were usually warmed for operating temperatures to insure proper final testing. Before the final inspection was completed it was discovered that the motors had been improperly dried and the bottom layer of varnish was still wet. The final result was that 30 electric motors were rejected at one time. In all departments of the Dinamo Plant, foremen and workers alike took shortcuts at the expense of the product, in order to meet production quotas.
 - e. Another type of bottleneck was in the technical designs of transformers and motors. Whenever a new type of equipment was to be built, a prototype was first constructed to ascertain that it would be adaptable to local production facilities and also to gear the machinery to the particular product. The main flaws in designing were not discovered during the production of the prototype but much later when the equipment was in production on a larger scale.

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25X1

f.	in the molding department of the
- •	Dinamo Plant series of 20-30 electric motor housings were being
	rejected at one time for faulty workmanship again caused by the
	great haste and pressure placed on the workers to meet production
	quotas. In regard to electric motor casings or housings the
	large and more complex casings were obtained from the 23 August
	Plant (formerly Malaxa Works) in Bucharest.

Unsatisfactory raw materials also caused bottlenecks.

high

tension (60,000 volt) transformer porcelain insulators, which had
until that time been obtained from the Turda Insulator Plant,
were found to be unsatisfactory. These insulators, which were 25X1
always white in color, were always unsatisfactory in that the
porcelain was not homogenous and usually had interior cracks.

a Dinamo built 5,000 KVA transformer had burned out at Cluj /4644N-2333E7 due to the faulty
insulator.

using only Czechoslovak made porcelain transformer insulators,
which were brown in color and found to be satisfactory.

h. During and prior to World War II, Rumania had been noted for its careful and standard production of bakelite-varnish covered fish paper type insulator called "Preshpan".

World War II the Germans exchanged industrial machinery (which 25X1 was of high priority at the time) for the Rumanian made Preshpan. The Rumanian Preshpan, produced since World War II has been of an exceptionally poor quality and has caused many final 25X1 inspection rejects at the Dinamo Plant. The Preshpan was being imported from Czechoslovakia, but the Rumanian 25X1 product was also being used. The "Pertinaz" type fish paper insulator was being received by Dinamo from Bulgaria some were made in Rumania. The Pertinaz came in sheets with thicknesses ranging from 2-20 mm. It was also delivered in tubular form ranging from two or three up to 30 to 40 cm. diameter. The Pertinaz were thin sheets of paper pressed together and glued with insulating lacquer or varnish.

Insulating Varnishes

25X1

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- Bakelitelack, used in the Dinamo Plant was always of Czechoslovak manufacture and was delivered in large barrels 25X Until the middle of 1951 this varnish was of a lighter color. However, after July or August 1951, the varnish was of a lighter color but still brown. The new type was more elastic and therefore more satisfactory in its dried state. This bakelitelack phonetic spelling which was used to impregnate transformer coils and connections was oil resistant and before usage a thinner was added which smelled like (but was not) ether. in 1951 there was talk in the factory that a Soviet made bakelite lac was to be used but the plant engineers decided against it and chose the Czech type.
- used to impregnate coils of electric motors. It was not oil resistant and had a greater viscosity than the Bakelitelack. Electric motors impregnated with the black lacquer were placed in drying ovens for about 18 hours. Small motors of 10 KW or under were dried in a vacuum chamber (which could accommodate only small motors) for approximately 10 hours. There were two types of black lacquer: after drying, one had a shiny finish, the other a dull finish.
- 16. Scherlack, used in the impregnation of insulating materials of transformers, was imported The Rumanian product was not considered as good.

25X1

necessary to continue operation on Sundays when planned production for the month was lagging. Workers, other than engineers, technicians, etc., received overtime pay. It was necessary to punch a time clock upon arrival and departure from the plant. Work shifts were from 0700 to 1500, and 1500 to 2300. However, toward the end of each month much overtime work was necessary to meet the production schedule. During the eight hour shifts there would be no break for lunch. Absence from work was thoroughly investigated by the administrative section. Workers were paid a percentage of a days pay for a day lost the small clinic of the plant due to illness. used for treatment of injuries occurring during the work day.

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It was compulsory for the employees to attend meetings held at least once every two weeks. The lectures usually concerned plant production and ended with international affairs and communism. the 25X1 average wage paid to shop employees to be 5,000-6,000 lei a month in 1951. Engineers averaged 10,000 lei a month; section chiefs earned from 10,000 to 20,000 lei a month; office workers earned from 4,000-5,000 lei a month. The morale of the shop workers was generally the same as in other plants and factories in that they distrusted the chiefs of their section and new employees. The workers complained among themselves that there were constant lectures to increase their individual hourly work output, which while not altering their hourly wage, would reduce the number of work hours.

Security				
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- 23. In addition to the Dinamo Electrical Dquipment Plant at Bucharest and the Electroputere Plant at Craiova, the following two plants were part of the electrical equipment production net in Rumania.
 - a. Electro-Motorul located near or at Resita or Hunedoara, was a factory, which dealt especially with special orders for 25X1 the production of all types of electric motors. 25X1 many products of this plant were destined for the USSR.
 - b. Electro-Precizia, located in the city of Brasov _4538N-2534E7 was a plant supplementing the production of the Dinamo, Electroputere and Electro-Motoru plants by manufacturing small (10 KW) electrical motors. ______ this plant was to continue this type of production, whereas Electroputere at Craiova was to assume the role of the major Rumanian electrical equipment producer using the Dinamo Plant at Bucharest for research, experimentation, special orders and special projects.

Personalities

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24.	(Fnu)	DASCALESCU	became	Director	of	Dinamo	in	about	January	1952.
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	-8 -	25X1
-		25X1
5.	Dumitru COMAN was Director of Dinamo from the time of its four in 1948 until the latter part of 1950 or the beginning of 1951 which time he was given a more important position with the Mix of Electric Energy. He again became Director of Dinamo in the of 1951 when production output was not meeting the quota. In January 1952 COMAN was again assigned to the Ministry of Elect Energy.	., at ^{25X1} istry middle 25X1
5. · - 	(Fnu) FRIED was a former Director for a few months in 1951.	
	(Fnu) MAHALINSKI former Director prior to 1950 but been transferred Electroputere in Craiova as Director.	,25X
2 8.	(Fnu) NOVODNIC became Assistant Director of Dinamo about the 1951.	25X middle of
). [(Fnu) CERVIU, a chief engineer, was in charge of the planning production.	of 25X1 25X1
).	Mirel STOCUESCU was an assistant chief engineer.	25X1
. ,		
ا	Stefan IONESCU was an assistant chief engineer.	25X1 25X
-		
2.	(Fnu) BUNEA was an engineer in the Department of Studies and I) da.a.b.a

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44.		Sales Department: the chief of this department was a former r with AEG.	25X1
45.	In the Chief.	Production Engineering and Plans Department: (Fnu) DEPAUSEK,	
46.	Union a	ctivists:	
;	(F	nu) NORA (female) nu) PETROIANU nu) BARBU	25X1
j			
Encl	osures:	A. Pinpoint location of Dinamo Electrical Plant B. Sketch of Dinamo Electrical Plant C. Sketch of Floor Plan Administrative Building Dinamo	25X1
		D. Sketch of Main Building (Floor plan and cross section) Dinamo Electrical Plant Bucharest	25X1
		E. Sketch of Floor Layout Accessory Production Secti	on 25X1

ENCLOSURE A

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25X1

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Overlay of 0251-9999-1-25 ICM Pinpoint Location of the Dinamo Electrical Plant

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ENCLOSURE B (Cont'd)

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Legend

Office building: A yellow, cement-covered, brick building, three stories high. It had a low pitch gable tile or slate roof. It housed offices of the director, chief engineer, and accounting.

Office building: Of the same construction as building described in Point #1. It housed the personnel office, projects office, and technical office.

Office building: Of the same construction as buildings described in Points #1 and 2. It housed the political office, technical Office building: laboratory, administrative office, storerooms, etc. Reference is made to Encl. C this report for detailed layout of PoInts #1, 2, and 3.7

Main building: this building was approximately 70 m. long, 45 m. wide, and 15 m. high at the center section. It had concrete and brick walls approximately 30 cm. in width and was covered with a sheet metal roof. Most of the flooring was constructed of wooden blocks. However, a part of the flooring in the north section of the building was of concrete. Skylights were situated in the peaked center section of the roof. Windows were also predominant on the south side of the building and were found also on the three other sides.

25X1 25X1 Most outer

sections of the building were provided with ample natural light. This building housed lathe shops, a metal cutting shop, testing room, assembly shops, etc. /Reference is made to Encl. D for detailed layout of Point #4.7

Drying Room: A single story brick building; a metal plate roof. Melting and Molding Section: A single story brick building; metal plate roof.

۶: 8: Clothing room (Vestiere): A single story wooden building.

Sports equipment room: Single story constructed of wood. 9. Plant Maintemance Shop:

25X1

it was constructed of wood and was one story high. 10. Wood shop.

11. Pation shops

dymnasium: This building was to be used for another purpose in the 12. future. Buildings designated as Points #10, 11 and 12 were formerly used as hangars and were of wooden construction. were constructed of sheet metal. the roofs

25X1

Work shop: This building was formerly a hangar and had concrete walls with a metal plate roof (tabla).

Work shop: This building was formerly a hangar; it was of the same

construction as Point #13. 15. Alreraft engine repair shop: A cement-covered brick building with

a metal plate roof (tabla); one story high. Work shop: A cement-covered brick building, one story high with a metal plate roof. Skylights were included in the roof construction. Reference is made to Encl. E for a more detailed description of Foints #13, 14, and 16.7

it was constructed 25X1 Snack bar: A small one story building.

of brick and had a tile roof. Aviation laboratory: A one story building with cement-covered walls; it had a tile roof.

19. Canteen: A one story building constructed of cement-covered brick with a metal plate roof.

20. Dispensary: A one story building constructed of cement-covered

brick with a metal plate roof. 21. Single track rail spur: This rail spur serviced the main building

of the plant.

25X1

22. Apprentice school: A one or two story building constructed of cement-

23. Mess hall and meeting hall: This building was being constructed in January 1952. 25X1 it was to be two stories high. The walls were constructed of brick.

ENCLOSURE B (Cent'd)

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25X1

- 14 -

Legend (Cont'd)

27.

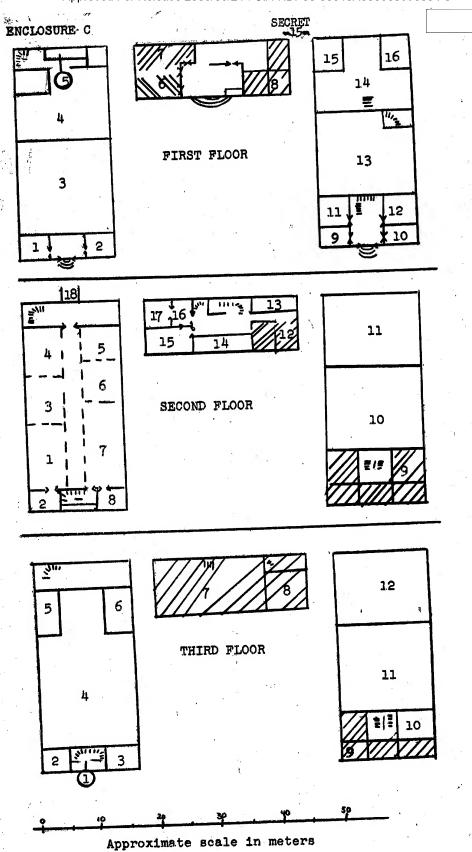
Proposed new entrance: This was to be the new entrance for plant 24. employees.

25. Guard house and information office: A small single story building

constructed of brick with a tile roof.
Main entrance: after the after the opening of the new entrance (Point #24) this main entrance would be used for officials

only. Strada Vatafului: A cobblestone street approximately six meters in width. The sidewalks were cement. All streets within the plant area

were constructed of cobblestone.



Skerch of Floor Plan, Administration Building, Dinamo

25X1

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- 9. Administrative office
 10. Storeroom
 11. Storeroom
 12. Office of Chief Engineer and Assistants
- 13. Administrative office
- Secretarial office 14.
- Office of Plant Director 15. 16.
- Office of Secretary to Director
- 17. Records room 18. Enclosed catv Enclosed catwalk

Third Floor

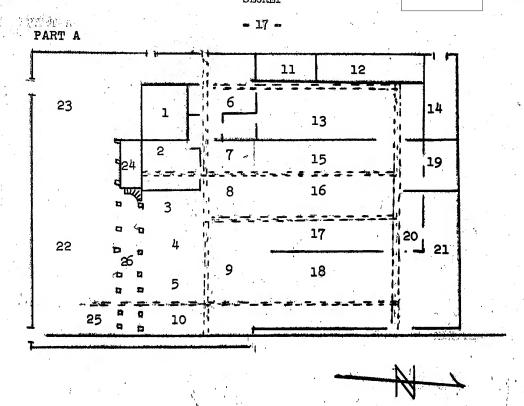
- 1. Recreation room
 2. Sitting room
 3. Musical instrument storage
 4. Entertainment hall
 5. Work room (tailor, shoe repair, etc.)
 6. Public address system
 7. Accounting office
 8. Administrative office
 9. Administrative office

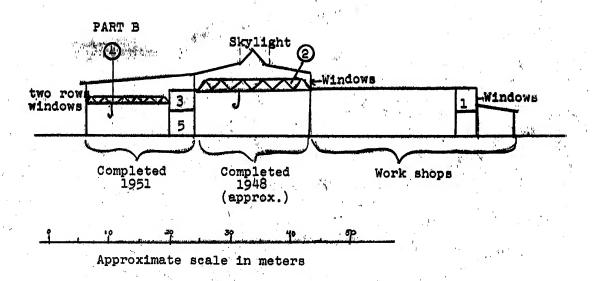
- 9. Administrative office
- 10. Technical laboratory
- 11. Storeroom
- 12. Storeroom

ENCLOSURE D

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25X1





Sketch of Main Building (Floor Plan and Cross Section)

25X1

1. to 16. 15.

ENCLOSURE D (Cont'd)

- 18 -

25X1

Legend

Part A

- 1. Testing bench
- 2. Testing bench
- 3. Transformer assembly section

- 4. Coil winding section
 5. Assembly section
 6. Drying or baking room (under construction in January 1952)
 7. Drying or baking room
 8. Armature (iron core) assembly section
- 9. Machine shop
- 10. Section for completed machinery 11. Storeroom

- 12. Machine shop
 13. Coil assembly
 14. Nickel plating section
 15. Work shop
 16. Motor assembly section

- 16. Motor assembly section 17. Metal cutting section 18. Sheet metal and cutting section
- 19. Toilets
- 20. Tool and instrument storage
- 21.
- 21. Tooling and instrument section
 22. Lathes, drill presses (large machine section)
 23. Lathes, presses, (small machine section)
 24. Control section

- 25. Rail spur
- Concrete pillars

Broken line on building layout indicates hand car track.

Part B

- Madambarances offices
- Overhead crane (approximate capacity -- 15 tons)

 Production offices. (This section was accessible from building Point #2, Encl. B, by means of an enclosed catwalk.)

 Overhead crane (approximate capacity -- 5 tons)
- Two rows of concrete pillars supporting offices and overhead cranes.

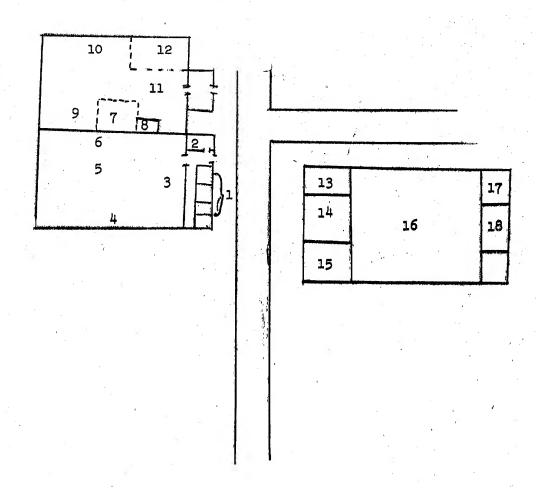
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ENCLOSURE E

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Approximate scale in meters

Sketch -- Floor Layout of Buildings Points 13, 14, and 16
Enclosure B -- Accessory Production Section

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ENCLOSURE E (Cont'd)

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25X1.

Legend

- 20 -

- Production offices
- Toilet Welding section
- Insulator section
- 55. Transformer box section
 6. Work shop
 7. Inspection benches
 8. Administrative office

- 9. Rheostat control box section 10. Lathes, presses, drill presses 11. Resistor assembly section

- Store room

- 12. 13. 14. 15. 16. 17.
- Drawings and plans section
 Assembly section (controllers)
 Accessory section, Chief's office
 Main accessory production section
- Cloak room
- Store room